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SCIENCE NEWS LETTER



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THE WEEKLY SUMMARY OF CURRENT SCIENCE•



April 16, 1938

Early Spring

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BOOKS

BOOKS—the protectors of civilization's stores of accumulated knowledge—are also the torch-bearers leading the procession of research toward new scientific frontiers. In the pages of this week's SCIENCE NEWS LETTER, readers will find listed the latest offerings of those who are in the forefront of the march of research. Some are already published; others are still on the presses. The issue will serve you well as a comprehensive bibliography of current works of science.

PHYSIOLOGY—AVIATION

Oxygen Starvation in Tissues Jeopardizes Altitude Flying

FIRST experiments on the dangerous cumulative effects of lack of oxygen for short periods such as in frequent short flights at high altitudes were reported by Captain H. G. Armstrong, Medical Corps, U. S. A., to the Federation of American Societies for Experimental Biology.

Pilots do not get acclimatized to high altitudes as mountaineers do, Capt. Armstrong's research indicates. Lessons learned from mountain climbing expeditions cannot, therefore, be applied to high altitude aviation.

Capt. Armstrong's finding explains why pilots on commercial airplanes complain more and more of chronic fatigue even though they only fly at high altitudes for an average of 3 hours a day. The reason is that the effects of short periods at high altitudes pile up and in time the combined effect may produce dangerous lack of oxygen in the tissues. Rabbits, which can stand altitude one and one-half times higher than

man, did all right for the first two weeks of daily four-hour "flights" to 18,000 feet, which would correspond to about 12,000 feet for man. After the two weeks, they suddenly began to deteriorate, losing weight, becoming anemic, paralyzed and most of them dying by the fourth week.

Even if engineers could find a safe, comfortable way to supply pilots and passengers with oxygen for high altitude flights, they would not have entirely solved the problem and removed the danger. Capt. Armstrong found that while rabbits could go to an average altitude of 38,000 feet without oxygen, many were dead at an additional 12,000 feet even when breathing essentially pure oxygen.

Encouragement For Diabetics

The possibility exists that some day diabetics will be able to eat a diet high in thiamin content and require less insulin than they do under present meth-

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ods of treatment, it was indicated by the report of Dr. A. R. McIntyre and J. C. Burke of the University of Nebraska. Working with experimental rats the scientists have found out that a diet with large amounts of thiamin (the synthetic vitamin B₁) increases the action of insulin.

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BOTANY

Magnolia Blooms Brave Cold of Early Spring

See Front Cover

MAGNOLIA trees planted in the shelter of the south side of a building bloom so early in the spring that their gay beauty is often cut short by late freezes.

This year in Washington, the cold rain which paralleled the snow of northern cities was late enough to allow them to make a good showing. Those on the front cover of this week's SCIENCE NEWS LETTER were photographed in the grounds of the National Academy of Sciences building where Science Service has its offices. The photograph is by Marjorie Van de Water, Science Service staff writer.

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ORADIO

April 21, 4:00 p. m., E.S.T.

ANTARCTIC DISCOVERIES—Prof. W. H. Hobbs, geologist of the University of Michigan.

April 28, 3:00 p. m., E.S.T.

MENTAL LONGEVITY—Dr. Walter R. Miles, psychologist, Yale University.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

Academy of Sciences, W. H. Howell, Vice-President and Chairman of Executive Committee, Johns Hopkins University, Baltimore, Md.; R. A. Millikan, Director, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; Harlow Shapley, Director, Harvard College Observatory, Cambridge, Mass. Representing National Research Council, Ludvig Hektoen, John McCormick Institute for Infectious Diseases, Chicago, Ill.; C. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.; Harrison E. Howe, Editor of Industrial and Engineering Chemistry, Washington, D. C. Representing Journalistic Profession, John H. Finley, Editor, New York Times; Mark Sullivan, Writer, Washington, D. C.; Dean Carl W. Ackerman, Columbia University Graduate School of Journalism, New York City. Representing E. W. Scripps Estate, Harry L. Smithson, Treasurer, Cincinnati, Ohio; Warren S. Thompson, Miami University, Oxford, Ohio.

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MEDICINE

Unbalanced Nerves Can Cause Heart Disease and Ulcers

Acetylcholine, Chemical of Nerves, In Bodies of Animals, Produces Heart Disease Artificially

ANIMAL studies which apparently prove the nervous origin of one type of heart disease and of such digestive derangements as stomach ulcers were reported by Dr. G. E. Hall of the Banting Institute, University of Toronto, at the meeting of the American College of Physicians in New York.

The type of heart disease is that in which the arteries of the heart itself and also other arteries in the body are affected by hardening and other changes. Because this condition occurs chiefly in the high-strung business or professional man, doctors have long suspected a nervous origin.

Dr. Hall was able to produce this same condition in animals by giving daily injections for as many as 400 days of small amounts of acetylcholine. This chemical substance is produced every time an impulse passes down one of the nerves of the parasympathetic system. These are the nerves which, with the sympathetic nerves, work together to keep the organs of the body, heart, stomach, lungs and all the others, functioning properly.

Acetylcholine is the substance by which the parasympathetic nerves do their part in this nerve teamwork. Acetylcholine normally is rapidly destroyed in the body after its task is done.

Produced in Animals

The fact that Dr. Hall could produce heart and artery disease in animals, exactly like that in man, by keeping more than normal amounts of acetylcholine in their bodies shows that an excess of this chemical must be at the root of such diseases in man. The excess is probably produced because the two sets of nerves are out of balance, the parasympathetic system doing more than its share of the work.

A new chemical to relieve attacks of the heart ailment angina pectoris, was reported to the Federation of American Societies for Experimental Biology meeting in Baltimore.

The new heart disease medicine is octyl nitrite. It was prepared by Drs.

John C. Krantz, Jr., C. Jelleff Carr and Sylvan E. Forman of the University of Maryland School of Medicine. While it is related chemically to amyl nitrite now generally used in angina pectoris, the octyl nitrite is better and its effects last longer.

Rickets Inherited

Rickets, or at least a tendency to this deforming disease, can be inherited, it appears from studies reported by Dr. Louise Pearce of the Rockefeller Institute for Medical Research at Princeton, N. J.

At one time, Dr. Pearce pointed out, heredity was considered a more or less important factor in human rickets. Then scientists discovered that proper diet, including plenty of calcium and vitamin D, and sunshine could prevent or cure

the disease and the hereditary angle was forgotten.

Dr. Pearce rediscovered the importance of heredity in studies on rabbits. Deformities of the bones like those in human rickets appeared in racial lines representing six different breeds of rabbits. A predisposition to these abnormalities is definitely inherited in the rabbits and it appears that heredity is also a factor in human rickets.

Dogs Have Nervous Breakdown

Dogs get nervous breakdowns just like humans and from the same cause—too great a mental conflict, it appears from studies reported by Dr. W. Horsley Gantt and associates of Johns Hopkins University.

Social factors, such as the presence of a human in the room or of a friendly dog, reassures the nervous animal so that he does not have an attack. Drugs such as bromides were not as effective. Prolonged rest on a farm was also helpful.

The condition lasted for five years in one animal. During this time anything in his environment which had been there during the first attack would bring on another, characterized by labored asthmatic breathing, heart palpitation, whin-



WARPED ROCKS

Rocks, millions of years ago, warped into complicated curvate shapes by mountain-building forces at the east front of the Rocky Mountains, buried by debris washed from the higher peaks, then bared by the waters released by melting glaciers and snowfields were caught by the camera of Dr. K. E. Lohman, of the U. S. Geological Survey, during the progress of field work in the South Fork Valley of the Shoshone River, near Valley, Wyo.

ing and a condition resembling sexual impotence.

The original attack, which Dr. Gantt termed a typical anxiety attack like those seen in men and women, occurred as a

result of conflict when the animal no longer could discriminate successfully between two musical tones close together in pitch.

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PSYCHOLOGY—POPULATION

Fixed National Boundaries Likely to Bring About War

Territories Must Be Adjusted to Changing Needs of Growing Nations Or Trade Must Make Them Unimportant

THE national boundary lines that are such a headache to school children are the cause of much more serious troubles, including war, Drs. Warren S. Thompson and P. K. Whelpton, of the Scripps Foundation for Research in Population Problems, told the American Academy of Political and Social Science.

Unless some way can be found to provide for a continuous adjustment of territory to the changing needs of nations, they said, or unless such far-reaching changes in trade relations can be achieved that the forceful annexation of territory will no longer appear desirable, the world may expect constant tension and occasional war.

"In this world of constant population changes," these population experts have concluded, "territorial relations and the channels of international trade can no more be frozen indefinitely than can class relations in a modern industrial society.

"The attempt to keep them frozen is certain to induce an equally determined attempt to thaw them out. Under present conditions this means war."

Population pressure which causes peoples to seek new territory and resources is more a state of mind than a literal crowding of peoples, they indicated.

Used to It

In China, for example, a large part of the people live at practically a subsistence level and death rates of 40 to 50 per 1,000 per year are very common, and there is no widespread feeling of pressure of population.

"The masses of Chinese are altogether unaware that there are great masses of people elsewhere who live better than they do," the experts said. They are also unaware that their level of living might be affected by the lack of certain re-

sources, particularly the lack of mineral resources. In fact, this relation will only become of importance in the thinking of the Chinese as industrial development proceeds and the use of minerals increases."

Japan was in practically the same condition 75 years ago, but since then that nation has developed an industrial life and come in closer contact with Western nations. The standard of living was raised and with that the death rate lowered, so that the population, which had not increased much for perhaps two hundred years before 1860, more than doubled in the 70 years since that time.

Those Who Have Want

"Only after the people began to get some of the comforts of life did they come to realize that there were vastly more to be had if only they could secure the resources to which to apply their labor," the report continued, "and inevitably begin to ask themselves why they should not have access to what they needed, since great resources were lying unused in neighboring lands."

No brief is being held for recent methods of gaining these resources, the population experts made plain.

"What has been said here is not meant as a justification of Japan's invasion of China, of Italy's conquest of Ethiopia, or of Germany's annexation of Austria. It is merely an attempt to explain how population pressure may and, as we believe, does add to the international tensions of today.

"It does not indicate sympathy with the attitude of national leaders who urge their peoples to have large families and to multiply rapidly and then claim that they must have more room in which to care for this population increase. There is no end to such a process."

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QUARTZ SPRING

Tiny coil springs made of quartz threads whose diameter is only six one-thousandths of an inch are now being produced in the laboratories of the General Electric Company for sensitive research balances. A difference in weight of only 1/28,000th of an ounce can be detected with apparatus using these quartz springs. Unlike steel springs they are not affected by moisture or moderately high temperature and render superior service for scientific research studies.

CHEMISTRY

Plastics Used For Making Coated Waterproof Paper

A CHEAP process for manufacturing coated waterproof paper by the application of a heat-setting synthetic resin to paper has been developed by a New York paper engineer, it is reported.

Ten to 75 per cent. of the cost of manufacturing paper suitable for use in cartons, packages and the like may be saved by the new process, Bert C. Miller, its inventor, claims.

Potential uses listed by Mr. Miller include protective liners for cartons, containers; glossy-waterproof papers for box wrappers and packages; paper boards for utility and decorative purposes; coating to replace cellulose film; protection for delicate printing and enhancement of colors, and others.

The plastic is applied to the paper by means of heat, the plastic cooling and setting on contact with the paper.

Science News Letter, April 16, 1938

NEW BOOKS ON SCIENCE

Science News Letter presents a comprehensive list of scientific books published or to be published between January 1 and June 30, 1938. All information is believed to be correct but is not guaranteed. Prices are listed where known. Prices marked * are tentative.

Aeronautics

- AIR TRANSPORTATION—A. E. Blomquist—*Pitman*.
 AIRPLANE SERVICING MANUAL—Victor W. Page—*Henley*, \$6.
 AIRPLANE STRUCTURES, 2d ed., 2 vols.—Alfred S. Niles and Joseph S. Newell—*Wiley*, \$5 each vol.
 AMERICAN WINGS: Modern Aviation for Everyone—Captain Burr Leeson—*Dutton*, \$2.
 BEYOND HORIZONS—Lincoln Ellsworth—*Double-day*, \$3.50.
 FIGHTING PLANES OF THE WORLD—Eric Sargent, ed by E. C. Talbot-Booth—*Appleton*, \$3.
 HISTORY OF AERONAUTICS: A SELECTED LIST OF REFERENCES—William B. Gamble—*N. Y. Pub. Lib.*, \$2.
 METAL AIRPLANE STRUCTURES—Flavius Earl Loudy—*Henley*.
 OVER THE NORTH POLE—George Baidukov, tr. by Jessica Smith—*Harcourt*, \$1.50.
 THROUGH THE OVERCAST—Assen Jordanoff—*Funk*, \$3.
 WHAT ABOUT THE AIRSHIP?—C. E. Rosendahl—*Scribner*, \$3.

Archaeology and Anthropology

- ACCULTURATION, A STUDY OF CULTURE CONTACT—Melville J. Herskovits—*Augustin*, \$2.
 THE ALPHABET—Monro S. Orr—*Collins*, \$2.
 THE AMERICAN INDIAN, 3d ed.—Clark Wissler—*Oxford U.*, \$3.75.
 ANTHROPOLOGY—Franz Boas and others—*Heath*.
 THE APACHE INDIANS—Frank C. Lockwood—*Macmillan*, \$3.50.
 THE CHINESE PEOPLE—Geo. H. Danton—*Marshall Jones*, \$3.50.
 THE CITIES OF THE EASTERN ROMAN PROVINCES—A. H. M. Jones—*Oxford U.*, \$10.
 THE CONQUEST OF CULTURE—M. D. C. Crawford—*Greenberg*, \$3.50.
 CORNISH CROSSES, 2nd ed.—F. F. G. and H. Dexter—*Longmans*, \$8.
 DAHOMEY: AN ANCIENT KINGDOM OF FRENCH WEST AFRICA, 2 Vols.—Melville J. Herskovits—*Augustin*, \$12.
 DURA—M. Rostovtzeff—*Oxford U.*, \$7.*
 EARLY EMPIRES OF CENTRAL ASIA—William M. McGovern—*U. N. Car.*, \$4.
 ECONOMIC SURVEY OF ANCIENT ROME: v.4; Eastern Provinces—T. R. S. Broughton and others—*Johns Hopkins*.
 THE EGYPTIAN COFFIN TEXTS. II. TEXTS OF SPELLS 76-163, (1938)—Adriaan de Buck—*U. Chicago*, \$8.
 ENVIRONMENT, RACE AND MIGRATION—Griffith Taylor—*U. Chic.*, \$4.*
 THE FAMILY: PAST AND PRESENT—B. F. Stern—*Appleton*, \$2.75.
 FIRST PENTHOUSE DWELLERS OF AMERICA—Ruth M. Underhill—*Augustin*, \$2.75.
 5000 YEARS AGO—Ralph V. D. Magoffin—*Hale*, \$2.75.
 FOLK-SONGS FROM THE SOUTHERN HIGHLANDS—Mellinger E. Henry—*Augustin*, \$5.50.
 GILGAMESH AND THE HULUPPU-TREE: A RE-constructed SUMERIAN TEXT—S. N. Kramer—*U. Chicago*, \$1.50.

GREAT INDIAN CHIEFS—Albert Britt—*Whittlesey*, \$2.75.*

THE HAVERFORD SYMPOSIUM ON ARCHAEOLOGY AND THE BIBLE—W. F. Albright, G. A. Barton and others; Elihu Grant, ed.—*Amer. Schools of Oriental Res.*, \$2.

HEAR ME, MY CHIEFS—Herbert Ravenel Sass—*Morrow*, \$2.50.

THE HIGH PRIEST'S GRAVE, CHICHEN ITZA—E. H. Thompson—*Field Mus.*

HISTORY OF THE JEWS (Ethiopic text)—Murad Kamil, ed.—*Augustin*, \$15.

HOW SOME IMPORTANT NORTHERN ARIZONA POTTERY TYPES WERE DATED—J. C. McGregor—*Museum of Northern Arizona*, 50c.

I AM A MAN—THE INDIAN BLACK HAWK—Cyrenus Cole—*Iowa State Historical Soc.*, \$3.

INTERNATIONAL DIRECTORY OF ANTHROPOLOGISTS—*National Research Council*, \$1.

INTRODUCTION TO PHYSICAL ANTHROPOLOGY, 2nd ed.—E. B. Stibbe—*Longmans*, \$3.25*

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THE MARIA GONDS OF BASTAR—W. V. Grigson—*Oxford U.*, \$12.*

THE MASTABA OF MERERUKA. By the Sakkarah Expedition, 1937—Prentice Duell—*U. Chicago*, Pt. I, \$40; Pt. 2, \$50.

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MOUNDS IN THE PLAIN OF ANTIOCH: AN ARCHAEOLOGICAL SURVEY, 1937—Robert J. Braidwood—*U. Chicago*, \$5.

THE NEGRITOS OF MALAYA—Evans—*Cambridge (Macmillan)*, \$7.

NEVER TO DIE: THE EGYPTIANS, IN THEIR OWN WORDS—Josephine Mayer and Tom Prideaux, eds.—*Viking*, \$3.50.

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PRELIMINARY REPORT OF THE SMITHSONIAN INSTITUTION—HARVARD UNIV. ARCHAEOLOGICAL EXPEDITION TO NORTHWESTERN HONDURAS, 1936—Wm. D. Strong, Alfred Kidder II and A. J. D. Paul Jr.—*Smithsonian*, 80 c.

PROSYMNA—Blegen—*Cambridge (Macmillan)*, \$45.

RACE ATTITUDES IN SOUTH AFRICA—I. D. MacCormac, *Oxford U.*, \$4.25.

A REPORT OF THE SUSQUEHANNA RIVER EXPEDITION SPONSORED IN 1916 BY THE MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION—Warren King Moorehead, Comp.—*Andover Press*.

RESEARCHES IN ANATOLIA. VII-IX. THE ALISHAR

HUYUK, SEASONS OF 1930-32, Pt. III. H. H. von der Osten—*U. Chicago*, \$25.

SACRIFICES IN ANCIENT ISRAEL—W. O. E. Oesterley—*Macmillan*, \$4.

SAVAGE SYMPHONY—Eva Lids—*Random*.

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SERIES OF AMERICAN PLANT MIGRATIONS, No. I—Berthold Laufer—*Field Mus.*

SINGING FOR POWER; SONG MAGIC OF THE PAPAGO INDIANS—Ruth M. Underhill—*U. Calif.*, \$2.

THE SKY-RELIGION IN EGYPT—Wainwright—*Cambridge (Macmillan)*, \$2.50.

SOURCE BOOK FOR AFRICAN ANTHROPOLOGY, 2 Vols.—W. D. Hambly—*Field Mus.*, \$6 ea.

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METHODS AND MATERIALS FOR TEACHING BIOLOGICAL SCIENCES—Miller and Blaydes—*McGraw*. NEW INTRODUCTION TO BIOLOGY, Rev.—Alfred C. Kinsey—*Lippincott*, \$1.76.

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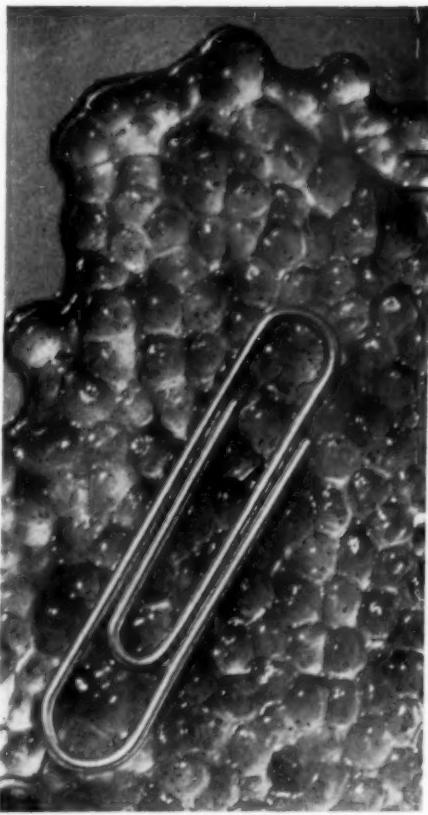
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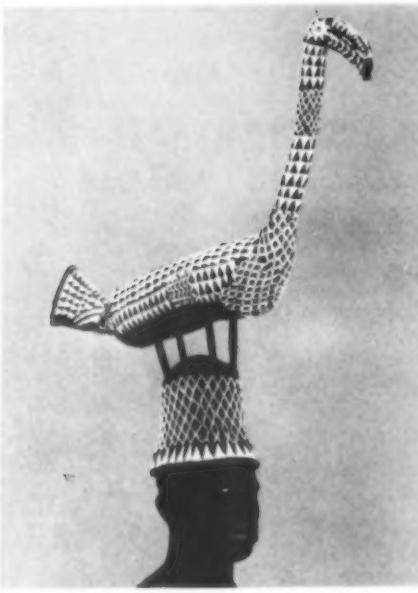
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ASTRONOMY Killing Showers

● "Showers of meteorites—that is, a real bombardment of celestial origin—although not frequent are not uncommon . . . The most destructive fall of recent times occurred on 30 June 1908 in, fortunately, an almost uninhabited region of Siberia between the Yenisei and Lena rivers and about 700 miles north of Lake Baikal . . . The furious blast accompanying the meteoric fall had felled every tree within an area of several hundred square miles; the bark was torn off the trees and the trunks were scorched by the terrific heat; all human and animal life must have perished instantaneously. Within the zone of destruction a score or two of craters were found, the largest about 50 yards in diameter, produced by the impact of the meteorites, or the fragments of a single large one."—W. M. Smart in *ASTRONOMY* (*Oxford Univ. Press*).

Science News Letter, April 16, 1938

ETHNOLOGY Bad Man

● "The Apache was the original 'bad man' of the Southwest. The Pueblo Indian was his victim long before the coming of the white man. Not until after the Pueblo Indians came under the sway of the Spanish—and, in consequence, under their protection—did warfare against the white invaders become the order of the day. From the first, the Apaches have been the most hardy, warlike, mobile tribe known to history. They 'wandered everywhere and dwelt nowhere'. Marauding and murdering, they were constantly on the move—the most disconcerting and harassing of enemies. So cunning were they in ambush and so stealthy in attack that a handful of them could keep a community in terror or an army in disorder."—Frank C. Lockwood in *THE APACHE INDIANS* (*Macmillan*).
Science News Letter, April 16, 1938

ORNITHOLOGY Industry

● "He rises at the earliest dawn, and devotes the whole of the day, in intense industry, to his favourite pursuit. The specimens from which he makes his drawings are all from nature; carefully noting the colors of the eye, bill, and legs; measuring, with great accuracy, every part of the bird. When differences exist, either in the sexes or young, several figures are given on the same plate; sparing no labour in retouching old drawings or in making new ones, in all cases where he conceives there may be a possibility of making an improve-

ment. In this way, he has already succeeded in figuring nearly the whole of the birds necessary to complete his splendid and important work."—John Bachman in *AUDUBON THE NATURALIST*, by Francis Hobart Herrick (*Appleton-Century*).

Science News Letter, April 16, 1938

MEDICINE

Ladies of Medicine

● "The women of the 'Knights of the Round Table' were always ready to tear up their petticoats or flowing sleeves to make a bandage for a bleeding wound. Sir Launcelot 'made fayre Elayne to gadre herbes for hym to make a bayne'.

"Atula cures Horn's wounds; the squire's beautiful daughter cared for the injured Gawain; the daughter of Guyon-le-Gris, Merote, gave to Gérart many kinds of treatment in order to cure him; the 'ladies of Salerno' healed Estien de Valprés; and the damsels in the Tristan stories applied plasters of egg-white and fennel and salt and plantain leaves to an infected wound. The women of these stories gave their patients mandrake for pain (compare the Parzifal episodes); and with this for a narcotic they even enucleated cataracts from the eyes. Isolde is mentioned sixteen times in the English versions of the Tristan legends as having both medical and surgical skill."—Kate Campbell Hurd-Mead in *A HISTORY OF WOMEN IN MEDICINE* (*Hadam*).

Science News Letter, April 16, 1938

PHYSICS

Light Energy

● "It is really astonishing that the enormous energy of the sun, which our earth receives daily is not used technically, or stated more exactly, is not transformed into other forms of energy. But it is still more astonishing that we have not changed the light, whose electromagnetic character we have known for decades and whose field strength amounts to several volts per centimeter, into useful electric energy and converted the displacement currents of the light into electrical conduction currents."—Bruno Lange in *PHOTOELEMENTS AND THEIR APPLICATION*, translated by Ancel St. John (*Reinhold*).

Science News Letter, April 16, 1938

THE AUTH

THORS SAY:

ZOOLOGY

Noblest

● "The wild bull—that is, the one who has never been herded up, rounded in, lassoed or branded—is, I think, the noblest game in America, with possibly the single exception of the large, or California, grizzly. He knows no fear, and shrinks from no enemy, having been accustomed all his life to fighting his rivals and other formidable wild animals, and when surrounded by his family is always spoiling for a fight. He will come a mile for his enemy, and will as lief charge a hundred men as one. To kill him in the manner described, involves no special skill or difficult pursuit, but it requires the highest quality of a virtue not too common even among brave men—cool, dauntless presence of mind."—Isaac J. Wistar in AUTOBIOGRAPHY OF ISAAC JONES WISTAR 1827-1905 (*Wistar Institute*).

Science News Letter, April 16, 1938

ESTHETICS

Beauty

● "It should be well understood that one cannot improve on Nature. The nearer it can be copied the better. But not all Nature is beautiful, and one must select that which appeals. So it is sometimes necessary to simplify a scene by omitting unseemly details, and possibly to rearrange parts in order to produce a man-made composition. Otherwise the nearer one can copy what is before him the better will be his picture."—John L. Ridgway in SCIENTIFIC ILLUSTRATIONS (*Standard Univ. Press*).

Science News Letter, April 16, 1938

AVIATION—INVENTION

Voice From Above

● "Perhaps one of the most novel and effective means of protecting life ever devised is now in use by the Coast Guard planes. Last year the quiet Virginia coast was startled to hear a tremendous voice pouring out of the skies! 'This is the United States Coast Guard testing a new invention' thundered the voice. The people looked aloft and saw an amphibian flying high overhead. From it came the mighty roaring voice! 'Testing a new invention'.

"It was a huge loudspeaker broad-

casting from the skies. This same device, flown high over the coastal waters, warns small boats of approaching storm. Likewise, the Coast Guard planes soar over the Florida keys and coast to warn of hurricanes. Hundreds of lives have been saved in this manner.—Burr Leyson in AMERICAN WINGS (*Dutton*).

Science News Letter, April 16, 1938

PHYSICS

Hidden

● "In our endeavor to understand reality we are somewhat like a man trying to understand the mechanism of a closed watch. He sees the face and the moving hands, even hears it ticking, but he has no way of opening the case. If he is ingenious he may form some picture of a mechanism which could be responsible for all the things he observes, but he may never be quite sure his picture is the only one which could explain his observations. He will never be able to compare his picture with the real mechanism and he cannot even imagine the possibility or the meaning of such a comparison."—Albert Einstein and Leopold Infeld in THE EVOLUTION OF PHYSICS (*Simon and Schuster*).

Science News Letter, April 16, 1938

GEOGRAPHY

Influence

● "If we should attempt a sketch of the history of civilization, we should immediately find that, although the climatic phase is much more important than is usually recognized, it is only one among many. The path of progress has been influenced not only by the air that man breathes, but by the soil beneath his feet, the waters that ebb and flow, the mountains that block his path, the minerals that lie in their depths, and the swarming plants and animals of the land, the air, and the water. This would by no means end the matter, for we should have to face the question of the innate qualities of different groups of people."—Ellsworth Huntington in SEASON OF BIRTH (*Wiley*).

Science News Letter, April 16, 1938

PHYSICS

Impact

● "At the high speed of 60 miles per hour, the impact is nine times as great as it is at 20 miles per hour. The force with which we hit a fixed object is increased as the square of the speed of the moving car. One might as well drive his car off a roof 120 feet high, or from the top of a nine-story building, as to hit something when driving at 60 miles per hour."—Charles E. Dull in SAFETY FIRST—AND LAST (*Holt*).

Science News Letter, April 16, 1938

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PSYCHOLOGY

Men Jay-Walkers Thrice As Numerous as Women

Crossing Diagonally Saves Only Twelve Hundredths of Second Yet Men Take Risk; Men Also Run Through Lights

THREE times as many men as women take the added risk of being hit by an automobile by crossing street intersections diagonally instead of at cross-walks in order to save twelve hundredths of a second.

Ninety-five per cent. of the motorists who attempt to "chisel" at stop-and-go traffic signals are men.

These are among traffic facts reported here by A. R. Ellis, president of the Pittsburgh Testing Laboratory, in a survey of pedestrian and motorist behavior conducted as part of the Order of Elks' national safety campaign, aimed at reducing automobile fatalities below the record 39,700 total reached last year.

Stop-watch timing of pedestrians, Mr. Ellis declared, indicated that "it takes the average person about ten and one-half seconds to cross a street, and it takes more than twenty and one-half seconds for the average pedestrian to cross from one corner to another by cutting diagonally through traffic.

"That means that at the risk of being killed or injured, a pedestrian can at best save only a few steps by jay-walking. The tests showed that nearly three times as many men as women took this chance."

Studying the middle-of-the-block jay-

walker, Mr. Ellis and his associates found that "women are just as apt as men to save time by crossing the street in the middle of the block instead of at the corner."

In this case the futility of trying to save time by jay-walking is even more clearly illustrated, for it takes the average pedestrian more than four seconds longer to cross the street in the middle of the block than if he had crossed at a corner.

One driver out of five attempts to cheat at traffic light controlled intersections by continuing across the intersection after the light turns to red, it was further learned. In an effort to gain a second or two one driver out of every ten will beat the traffic light by starting across the intersection before the light turns green.

One reason many pedestrians get caught in cross streams of traffic is that in trying to guess the time the light will change, their estimates vary all the way from two seconds before the light changes to 52 seconds after it changes, according to the tests.

Men were shown to be better guessers than women, their estimates coming about six seconds nearer to the correct time for a traffic light change.

Science News Letter, April 16, 1938

PSYCHOLOGY

Expressions of Emotion Are Dictated by Culture

THE CLENCHED fist of anger and gaping, open mouth of astonishment. These and the many other expressions of emotion are so much a part of ourselves that it is hard to believe that they are not all instinctive but may be a part of culture and tradition just as much as are the lifted hat of deference or the handshake of friendship.

An excursion into the literature of foreign cultures and into their conventions for portraying emotions on the stage re-

veals the fallacy of this assumption. Two of the most famous of Chinese novels were recently searched by Dr. Otto Klineberg, of Columbia University, for what evidence they might hold indicating the Oriental ways of displaying emotion. A Chinese treatise on acting was also read for this purpose, and a book of admonitions to young ladies on propriety of behavior.

When the Chinese fiction character sticks out his tongue he does not mean

what the small American boy does with the same gesture. In China, it means surprise. When it is said of the Chinese heroine that "her eyes grew round and opened wide," the lady was angered, not surprised. When the hero "clapped his hands," he was not joyful but worried. "He would fain have swallowed him at a gulp," means hate and not at all what the American "I could eat you up" implies. When "he laughed a great ho-ho" you needn't expect a hearty good humor, he is, instead, greatly angered.

Expressions of the emotion that depend more upon involuntary action of the body mechanisms are more alike in East and West, Dr. Klineberg found.

"Every one of his hairs stood on end, and the pimples came out on the skin all over his body," "A cold sweat broke forth," "She would fain have shrieked but her mouth was like a mute's" and "His face was red and he went creeping alone outside the village" are understood in any land.

Science News Letter, April 16, 1938

PHYSIOLOGY

Electric Current of Cells Expels Body Fluids

DELVING into the choroid plexus, which is the part of the brain where the spinal fluid is manufactured, Drs. Louis B. Flexner and Robert D. Stiehler of the Johns Hopkins Medical School have discovered that an electric current drives this fluid out of the cell manufacturing plant and propels it into the spinal canal.

While their research applies only to the choroid plexus and the spinal fluid, it is a beginning attack on the unsolved problem of how other substances manufactured by the body cells, hormones for example, are pushed out into the body.

The electric current which does this for the spinal fluid is generated by the energy developed by the cells of the choroid plexus as they use oxygen to burn food for nourishment.

An important feature of this research was the discovery that a complete electric circuit is formed in the body. Previously scientists believed that the circuit could not be complete until they added an electric wire. The Johns Hopkins scientists found that in the choroid plexus the circuit is completed by a membrane which can carry electric current like a wire. This membrane lies between the connective tissue and the outer covering of the structure.

Science News Letter, April 16, 1938

OCEANOGRAPHY

**Mariners Report
Iceberg Visibility**

HOW far away can an iceberg at sea be detected by a man on watch? Mariners, cooperating with the U. S. Hydrographic Office, report that a berg one to three miles away can be seen in the daytime during a fog or a drizzling rain, while on a clear, starlit night it can be seen only when it is a quarter-mile distant.

When fogs are light, the mariners report, a man aloft will "spot" a berg sooner than one on deck, but if the fog becomes dense, a man on deck will be the first to detect the breaking of the sea on the base of the ice, or the ice fragments broken away from the main berg.

Science News Letter, April 16, 1938

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A letter written by Christopher Columbus in 1493 to announce his discovery of what proved to be a new world was the subject of one of the most famous of literary counterfeits, so pronounced in a famous lawsuit in 1899.

Science News Letter, April 16, 1938

MEDICINE

Parrot Fever Danger Lurks in Healthy Birds

DANGER of parrot fever, that rather mysterious ailment that strikes unexpectedly and often fatally, still exists, even though no epidemics have been reported recently. The reason is that the virus that causes the disease may be carried for a long period in the bodies of healthy birds. Consequently inspection and even quarantine may be ineffective in detecting the disease among birds and preventing its spread to other birds or to humans.

Humans may get the disease very readily from infected birds, both sick ones and healthy carriers. Birds of the psittacine or parrot family, which includes parrots, parakeets, love birds, macaws, cockatoos, lories and lorikeets are especially prone to the disease. It sometimes affects other birds, such as canaries in captivity, wild birds and even domestic fowl.

Parrot fever epidemics have occurred frequently in families that kept pet parrots or other birds of the parrot family.

An outbreak of 11 cases occurred, in spite of elaborate precautions, in the laboratories of the U. S. National Institute of Health when investigation of the disease was under way. Some of those attacked had had no contact with the sick birds. An inspector of aviaries in New York City recently contracted the disease although no illness had been detected among the birds he inspected. His illness was considered almost certainly the result of contact with a bird that was a healthy carrier of the infection.

The only practical way to prevent the disease in man is by avoiding contact with tropical birds, health authorities have concluded. For this reason the health departments of New York State and New York City are considering regulations to prohibit in the state and city the importation, breeding, sale or giving away of birds of the parrot or psittacine family.

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